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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,947	07/01/2003	Shunsuke Mizutani	17360/80050	4104

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WASHINGTON, DC 20006-1021

EXAMINER
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CHU, HELEN OK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/610,947	MIZUTANI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Helen O. Chu	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Applicants' Amendments have been received on September 14, 2006. Claims 1-14 have been cancelled. Claims 15-24 are new claims.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, there is no support for the claim recitation discloses a first flow channel and a second flow channel on the same gas flow plate and a switching device switches the first and second flow channel from parallel to series connection and vice versa. Figure 1-15 in the Specification does not show or disclose any type of switching devices on the plate in which causes the first gas flow channel and a second gas flow channel to change the flow direction. Specifically, Figure 1 shows valve devices that would either optimize or minimize the flow at certain external areas but does not give an indication to one of ordinary skill how to manipulate the flow from series to parallel between each flow path within a flow field plate. In addition, Figure 2 and Figure 4 illustrates at least

two flow paths but does not indicate how these flow paths switches from series to parallel flow between each other.

Claims depending from claim 15 are rejected under 35 U.S.C. 112, first paragraph, are also rejected for the same.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. The rejection under 35 U.S.C 112, second paragraph on claim 1, as being indefinite is withdrawn because the Applicants have cancelled the claim.

7. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation "switching device for switching a connection between said first and second gas flow channels within said at least one of said cathode gas flow plate and said anode gas flow plate from a parallel connection to a series connection, and from a series connection to a parallel connection" is unclear to the Examiner. This can be interpreted as a switching device on the plate that would manipulate the flow directions between the first flow path and the second flow path. However, one of ordinary skill cannot arrive at the claim recitations by the Specification provided by the Applicants.

Claims depending from claim 15 are rejected under 35 U.S.C. 112, second paragraph, are also rejected for the same rejection.

***Claim Rejections - 35 USC § 102***

8. To the extent the claims are understood in view of 35 U.S.C 112 rejections above, note the following prior art rejections.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 15-24 are rejected under 35 U.S.C. 102(e) as being anticipated by McElroy (US Patent 6,251,534).

In regards to claims 15-24, the McElroy reference teaches a fuel cell comprising a cathode flow plates, an anode flow plates and a diffusion layer disposed between the flow plates (Column 1, Lines 9-13). The reference also teaches a switching apparatus with a function capable of switching gas flow channels from parallel to series and vice versa. (Column 4, Lines 24-27). The McElroy reference illustrates two gas flow channels (Figure 3 and 4). McElroy discloses a stack of fuel cells (Column 2, Lines 66-67) with multiple flow field plates resulting in gas flow channels that equals to three or more leading to inlet and outlet (Figure 6, Components 610 and 620 respectively) manifold.

In regards to claim 8, the McElroy reference teaches an inlet and outlet gas flow path (Figure 1) that directs gas between one flow channel to another.

***Response to Arguments***

2. Applicant's arguments filed 9/14/2006 have been fully considered but they are not persuasive.

Applicant's principal arguments is:

- a. The McElroy does not disclose switching devices for switching a connection between the first and second flow channels within the gas flow plate of a cell, because McElroy only discloses switching the connection between separate stacks fuel cells.

In response to Applicant's arguments, please consider the following:

- a. The Applicant does not disclose switching devices for switching a connection between first and second gas flow channels within the gas flow plate of a cell. The only switching devices on the fuel cell disclosed by the Applicants are located at external regions of each fuel cell stack. The Specification does not support a switching device for switching a connection between first and second gas flow channels within the gas flow plate. That is there is no switching device on the gas flow plate that would cause the connection between the first flow channel and the second flow channel to be manipulated to switch between a series or parallel flow direction. The McElroy discloses switching devices external to the plate, which is equivalent to the Applicants' switching device causing a series and parallel flow. Please refer to 35 U.S.C 112 rejection.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC

  
TRACY DOVE  
PRIMARY EXAMINER

11/06